Hobbies WEEKLY

HOW TO MAKE A KAYAK

A CAMP NOTICE BOARD

2D.

July 25th. 1936

Vol. 82. No. 2127

THE FRETWORKER'S AND HOME CRAFTSMAN'S JOURNAL

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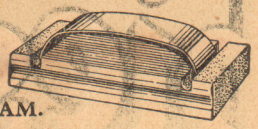

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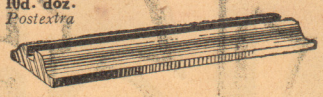

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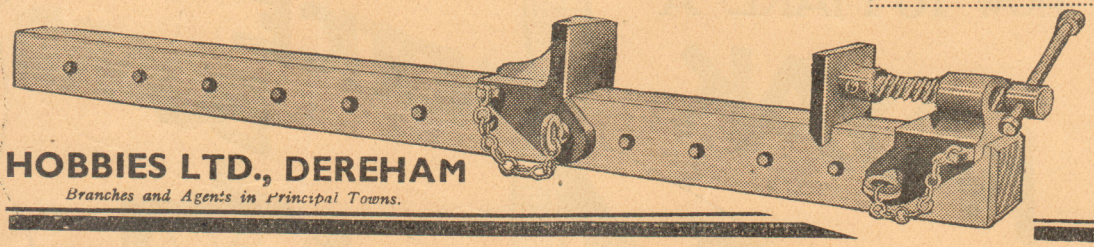

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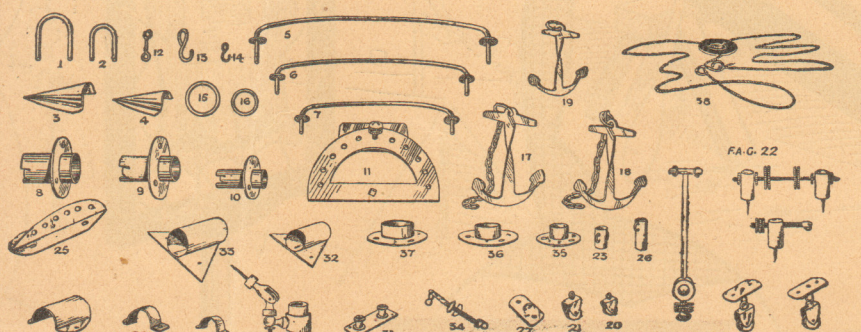

If you are making your own model yacht, these are the fittings you need. They are nicely made and finished. Illustrated one quarter actual size.

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July 25th. 1936

Vol. 82. No. 2127

AS mentioned last week, this issue is really a bumper number, packed full of interesting and practical articles on how-to-make and how-to-do subjects. I fully expect a large number will be making up that splendid kayak or canoe, on page 395 and no doubt most of you will be able to get the necessary timber from a local yard. See you have it completed by next week, ready for the final instructions on how to cover it, make the paddle and give the necessary finishing touches.

HAVING provided the opportunity to make a full size Canoe, I want to satisfy those who want to sail something smaller. Next week, therefore, you will have details for another splendid little sailing model yacht which should be quite as popular as our recent "Seabird." The second instructive article on Model General Purpose Aeroplanes will appear in the same issue.

TWO readers have notified me of their unusual collecting hobbies this week. One is of golf score cards, and the other is of cuttings of printers' errors in papers and periodicals. I must pay particular attention to my spelling in future and not rely on George quite so much! The reader in question, E. Baronius of Barnes, Surrey, found seven mistakes on the front page of an evening newspaper and 21 in the whole issue. None in Hobbies yet, I am glad to say! Anyhow he has collected over 80 since May, and has an ambition to find one in every daily paper.

A KEEN Leicester reader wants to form a Hobbies Club in that congenial city and I hope others living in and around will back him up. There are many League Members there and I am surprised to find that a place so progressive as Leicester should be behind others. Will readers who want to alter this state of affairs get in touch with W. Tallett of 122 Dorset St. What other people can do, he can do, is the sound motto of this worthy member!

I HAVE arranged a special feature for those who do *not* win prizes in our monthly photographic competition. There are always so many who *nearly* get them that it will be a considerable help, I know, if they learn just why they fail. I have, therefore, told our Photographic Expert to take a note of the most promising and winning pictures each month and let me have some comments on them at the end of the season. He is to select suitable prints and definitely tell why it is good or where marks were lost. So even if you are not a winner, look out for this article because our expert may take the one *you* sent in and so provide you (as well as other people, of course) with interesting and practical remarks.

THERE were some very keen-eyed competitors in our "Spot the Mistakes" Contest, because some found errors which were not faults at all! Anyhow, there was a large number of entries on all kinds of paper and in a variety of styles. Unfortunately, nobody found all the correct ones, but the nearest was submitted by Anthony W. Gamage of 43 Garrick Avenue, Golders Green, London, N.W. 11, and that wary reader is now the possessor of a spanking new Gem Machine! There were five others with two errors, and Consolation Prizes have been sent to them. They were G. Graham, of Redruth, Cornwall, E. R. Cox, North Thoresby, Lincs., L. Liddaman, Monk's Park, Wembley, J. McLean, Salthill, Galway, and J. B. Noble, Ongar, Essex.

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Next Week's Design—Small Clock

Correspondence should be addressed to: The Editor, Hobbies Weekly, Dereham, Norfolk, and a stamp enclosed with the Reply Coupon from Cover iii if a reply is required. Particulars of Subscription rates, Publishing, Advertising, etc. will be found on cover iii.

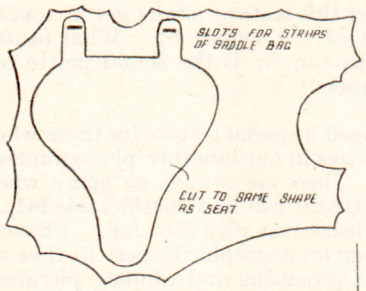
Send your own simple tips to The Editor, Hobbies Weekly, Dereham, Norfolk. Keep them short and add rough pencil sketches if possible.

HINTS AND TIPS WORTH KNOWING

For original Tips published the sender will receive one of Hobbies Self-filling Fountain Pens. We cannot acknowledge or print all tips sent in.

A Saddle Flap

HERE is a helpful cycle tip, when shopping with your bike in wet weather. A flap is cut from an old motor-bicycle inner tube to the shape shown in the diagram and secured to the saddle bag



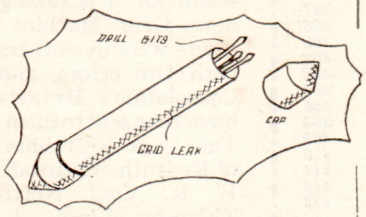
straps, by slipping them through two slits in the rubber. When going into a shop, just pull the cover over the saddle, thus keeping it dry.—(J. Gilbert)

Clothes Brush Hint

YOU can make your old clothes brush new again. Simply by washing the dirt out of the bristles with warm water and soda, and then, to harden the bristles again, just letting the brush stand in a strong salt solution for five minutes. Now put out to dry, making sure you put the bristles downwards.—(S.E. Clarke).

Drill Bit Container

TAKE the top of an old grid leak, and with a pair of pliers pull off the end of one of the cone-shaped plugs. Gently heat the



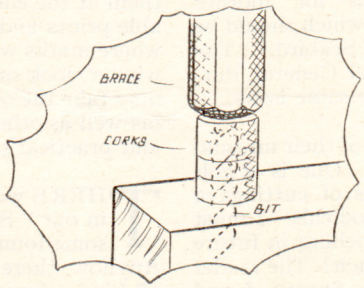
tubular case and remove wax with needle till it is hollow. Use the cap as a top and after slightly greasing the drill-bits, they may be kept in the case.—(H. R. Jenner.)

For Coin Collectors

GET a piece of plywood any convenient size and in it cut holes the sizes of your coins. Under this stick another piece the same size; glass can be added if wanted. It shows up well if the bottom is painted black and the top white, or some such colours.

A Depth Gauge

A VERY handy depth gauge can be made by putting corks of the necessary length on the drill. The corks can be cut and different corks with different size



holes for the drills. When the depth of the hole is reached, the cork will hit the work. These corks will not move in height as some gauges, as these corks will turn around and not change.—(E. C. Harder).

Rusty Ball Bearings

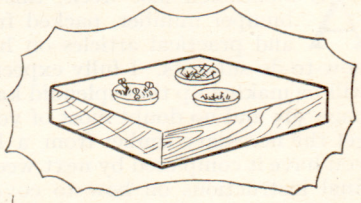
A WAY of removing rust from ball bearings is to pour a drop of paraffin in the palm of your hand, and put the balls into it. Then rub your other hand briskly against the first until the bearings shine. Then thoroughly oil them and replace.

Cane Seating

SOME cane-seated chairs look old and shabby because the seat is dirty and sagging. Wash the cane with hot water in which you have dissolved some washing soda. This will not only clean the cane, but the seat will tighten up.

Wineglass Stand

IF you should break a wineglass at the top of the stem and you are left with the "cup," don't throw it away—keep it. Obtain a block of wood the depth of the



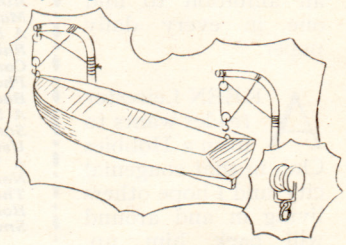
"cup," and get it large enough for about 3 or 4 "cups." Hollow a part out and fit the "cup" in it. The block can then stand on a bench and be used for containing tacks, screws, nails, etc.—(E. Baronius).

Frosted Glass

WHEN it is desired to convert plain glass into frosted glass, the cheapest, neatest, most realistic method is to use the airtight paper (but it must be misty, not clear) of cigarette packets. Cut it to shape and paste to the glass with strong white paste. The paper must be first stuck in the middle, working toward the edges, so there is no air between the glass and paper.—(G. Fudge).

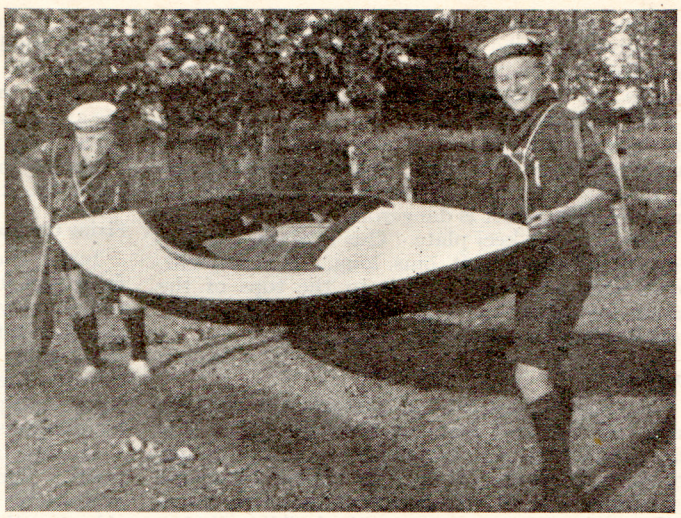
Model Lifeboats

A VERY effective thing to see on a model is its working lifeboats that lower, and these are very simple things to make. Obtain



four curtain pulleys and fix them to the davits and boat as shown in the sketch. Hooks and cord can be fixed to make them workable for raising and lowering realistically.—(E. Robinson).

HOW TO MAKE A KAYAK



HOW pleasant it would be to have a canoe and explore the many waterways with which this country is seamed! You have doubtless envied those lucky fellows with shop-bought canoes, and thought that boat ownership was beyond your slender means. Well, why not make yourself—not a flimsy toy, but a genuine bit of boatbuilding, which will soon pay for itself by money saved in boat hire? The one about to be described is based on a type used by Sea Scouts, and if well made, is thoroughly reliable. It is a single-seater, about 10ft. 6ins. long, and 2ft. 6ins. in the beam.

Red deal is a cheap and useful wood, and if well painted afterwards, will serve well. If one can afford it, we would recommend oak for the stem pieces, and ash for the side ribs. Brass screws MUST be used, as a canoe framework may literally fall to pieces owing to the rapid rusting of iron screws. Where nails are used, galvanized ones are indicated.

General Hints

The canoe (or kayak, as the Sea Scouts call it), is the same shape both ends, and is built in its preliminary stages upside-down on a "building timber", which is exactly 10ft. 10ins. long, and about 3ins. by 2ins. section. It must be dead straight, otherwise the canoe will be unsymmetrical. Screw it, each end, to a couple of strong boxes, sawing trestles, etc., and bevel each end (bevel on top) to 60°. The distance between the bevels should now be 10ft. 6ins.

For the stem pieces, take a piece 3ins. by 2ins. and 2ft. long, and plane to the wedge-shape shown in the detail. Then saw in two. These pieces are fastened to the ends of the building timber in such a way that their ends (which are cut back to 80°) are 8ins. above the foundation. (see diagram).

The moulds, or "shapes" are now tackled. There are six of them, but as Nos. 1 and 6; 2 and 5; 3 and 4 are the same (except for certain slots to be mentioned), only three distinct templates are required.

Take a piece of paper, and fold it down the centre. Keeping the fold on the right, rule 1in. squares on one half, and in turn, copy each of the three shapes on three pieces of paper. If the outline is cut with scissors, a perfectly symmetrical shape is obtained when opened out.

The small end shapes are composed of two horizontal pieces of 14ins. by 5ins. by ⅜in. deal joined with cross battens. The shapes can be pasted flat on them, and cut round with a pad or bowsaw. The other "open shapes" are composed of two vertical 4in. by ⅜in. strips laid over two horizontal ones.

Full Size Shapes

It is an advantage to paste the paper shapes on cardboard, and use the cardboard template to arrange the strips to the best advantage. Be very careful where the screws are placed. Reference to the drawings will show that much of the wood is cut away afterwards, but the screws must still remain, and hold the frame together strongly. As the corners are cut away, a nail will serve here. After the outlines of frames 2, 3, 4, and 5 have been cut, mark a line 2ins. inside each, but do not cut this yet.

Notice that the 1in. by ⅜in. slots for the coaming strip occur in different positions on each frame. The reason for this is obvious, but don't make any mistake. The slot in the middle of No. 2 is 1in by ⅞in.

MATERIALS (to present stage)

1 part building timber (deal) 11ft. by 3ins. by 2ins.
4 part frames (2, 3, 4 and 5), (deal) total—25ft. by 4ins. by ⅜in.
2 part frames Nos. 1 and 6 (deal), total—4ft. 6ins. by 5ins. by ⅜ins.
3 part keel and side plates (deal), each 11ft. 6ins. by 3ins. by ⅜in.
2 part stem pieces (oak), cut two from 2ft. by 3ins. by 2ins.
2 inner coaming strips (ash), each 5ft. by 1in. by ⅜in.
10 side strips (ash) each, 10ft. 6ins. by ⅜in by ¼in.
2 coaming pieces, (oak) each 5ft. by 5ins. by ⅜in.
1 back rest (deal) 1ft. 6ins. by 5ins. by ⅜in.
5 floor slats, (ash) each 5ft. by 2ins by ⅜in.
2 rubbing strakes (oak), each 11ft. 6ins by 2ins. by ⅜in.
1 outer keel, (oak), built from 3pieces each 11ft. 6ins. by 1½ins. by ⅜in.
2 stem capping pieces, Cut from 2ft. of 1in. beading. (1in. dowel planed down).
Odd strips of ⅜in. by ¼in. (ash), for decking.
Odd pieces for fillets, paddle, etc.
1 packet ⅜in. No. 6 brass screws.

(NOTE:- The whole can be made in red deal and spruce, but for a really good job, some better woods are indicated. Note also, that owing to the curved work, it is not convenient to give exact lengths. Neither is it desirable to cut the wood too fine, and all lengths are approximate. The building timber should, if possible, be borrowed, or hired.)

Divide the building timber up into seven equal 18in. divisions, and on either side of each, mark nail blocks, a shade under ⅜in. apart, so that the moulds can be set up in them, upside down.

Note that under frames 1 and 6, an extra piece ⅞in thick is first laid. It is of utmost importance that the frames are all in exact alignment, and square with the building timber and stem posts. An unbalanced craft is dangerous.

Now take the keel plate. This is of 3in. by ⅜in. section, and about 10ft. 6ins. long. It is screwed, (brass screws, don't forget!) to the tops of the frames (or rather the tops as they appear upside down), using two screws to each shape.

The Keel

Take great care not to disturb the moulds. Taper off the keel plate at the ends. The side plates, which are the same size as the keel plates, are also screwed on. If they are allowed to assume a natural curve, it will be found that they come half-way up the stem between the building timber and the keel plate. Screw them there.

Between the keel and side plates, five side strips are spaced each side. These are ⅜in. by ¼in. stuff, without any knots worth speaking of. Where they meet the stems, they can, with advantage, be bevelled so as to make them fit snugly. As with the side plates, it is as well to make them rather too long, and then trim off afterwards.

Interior Work

At this stage the canoe can be removed from the stocks, by unscrewing the stems from the building timber. The interiors of the four middle shapes are cut away with a padsaw. This could not have been done before as it would have seriously weakened the whole structure.

Take the coaming strips, which are each about 5ft. long, and 1in. by ⅜in section. They terminate at Frame 5, and meet in the middle of Frame 2, where they must be mitred. Cut away the tops of Frames 3 and 4, inside the coaming strips, and screw the strip to the frame edges.

Fixing the Coaming

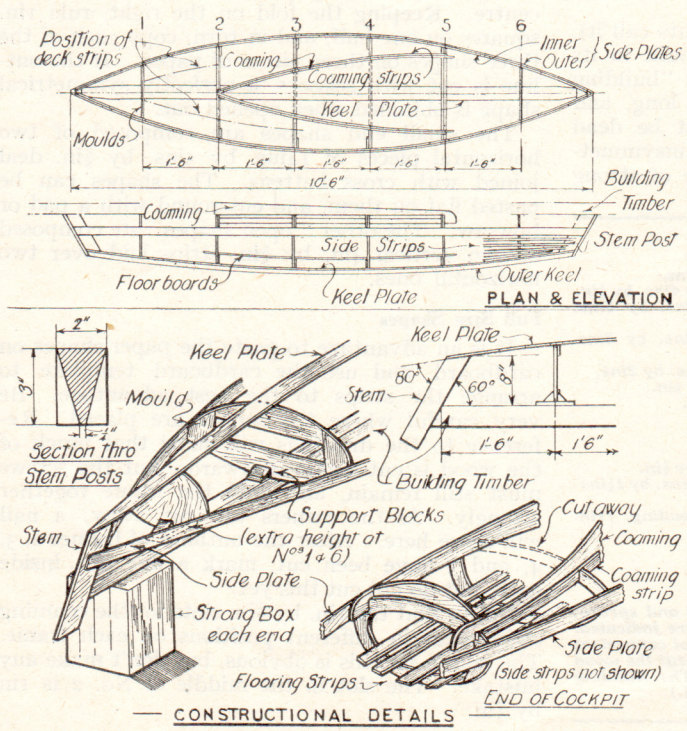
Inside the coaming strip, the coaming proper is fixed, but it is only screwed temporarily, as it has to be removed whilst the boat is being canvased, and then refixed permanently. It is of two pieces, 5ins. wide, but tapering to 3ins., so that it flares towards the prow. It is about 5ft. long and ⅜in. thick, and projects 2ins. beyond Frame 5, so that a notch must be cut to enable it to slip over Frame 5.

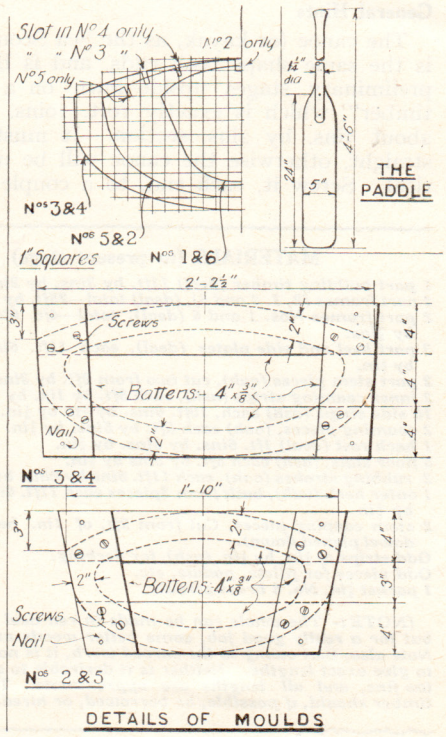
It may be tricky to make a neat joint at the point. The best way is to chisel the bevel as accurately as possible, and then, clamping the sides together, run a fine tenon saw down the joint.

A triangular block is screwed inside the point, and the lot screwed together. A copper or brass cap outside, is a good idea.

The Backrest

At the other end of the cockpit, a backrest with a curved top is screwed against the top of Frame 5. The projecting ends of the coaming are rounded off for neatness, as shown in the drawings, and triangular fillets fitted where deemed necessary. Four or five floorboards of 2ins. by ⅜in. deal, 5ft. long are fitted, but it is as well to defer screwing them down until the other framework has been painted.





The stem capping pieces, the side rubbing strakes, and the keel proper, can be made now and held in readiness until the canoe has been canvased. The stem capping pieces are lengths of 1in. wide beading, formed by planing down 1in. dowel.

The side rubbing strakes are precisely the same as the side plates, to which they are afterwards screwed, through the canvas.

The keel proper is 1½ins. by 1in. section, but as it has to be bent, it is as well to form it of three pieces of 1½in. by ⅜in. stuff, all well painted *inside*, before being screwed to the keel plate. Where the keel and stem caps, and the side strakes and stem caps join, they should be neatly bevelled.

The front stem (prow) is left projecting 3ins. and rounded off at the top. The other one is sawn off flush with the deck. A few strips of ¾in. by ¼in. stuff are fitted more or less concentric with the coaming strips, to support the canvas deck. Cut notches for them.

Go all over the framework with coarse, and then finer glasspaper, to remove all sharp corners. Bad joints, if any, should be now stopped with putty. Then give two good coats of paint, or better still, a wood preservative. Tar is sometimes used.

To Cover the Canoe

The work just described will keep you busy, and another article will tell you how to cover the canoe and make the paddle. If you have any difficulty don't forget that we shall be pleased to help you if you will write to the Editor, enclosing a stamped addressed envelope.

MAKING A NATURE OUTFIT

STUDYING Nature in the countryside is a fascinating hobby. Particularly if you are a Scout or a Guide or a hiker, you will have plenty of opportunities to take up this interesting pastime.

When you go in for the hobby in earnest, however, you ought to have a proper outfit. It need not be expensive, but with the few articles and gadgets described in the following paragraphs, you will be able to pursue the subject more easily and closely. Many things that would otherwise remain hidden will be revealed to you.

A Pocket Lens

First, one of the handiest and most useful things you can have is a magnifying lens. One of these can be bought for sixpence or so, but you will be wise if you buy the best you can afford.

Several kinds are obtainable, and the cheapest are those which contain two or three separate lenses, capable of being used either singly or together. An ordinary watchmaker's eyeglass can also be used in Nature work.

Little affairs called pocket microscopes are also to be bought. They consist of a metal tube with a lens at one end and a circle of plain glass at the other. Specimens are placed on the plain glass, and then the whole affair is held up to the light while you peep through from the other end.

Really, an ordinary naturalist's magnifying glass is better than a pocket microscope, unless you can afford to pay three or four shillings.

Hints about Collecting

A naturalist's outfit should also contain one or two flat tins and a few empty pill boxes. These can be carried in your haversack, but remember that a real student of nature does not collect merely for the sake of hoarding specimens. Take home in these boxes only flowers and insects you really require for study purposes.

If you are setting out to make a collection of pressed flowers, see that at least one of your collecting tins is long enough to hold flowers with long stalks. The tin should also contain several sheets of blotting paper—or, if such paper cannot be obtained, you may use any non-glossy kind, such as the paper bags in which grocers sell sugar.

When you gather the flowers, put them in the tin between layers of this paper. In that way the moisture in the specimens will be absorbed, and the pressing process at home will be made easier.

Making Notes

Another article carried by every enthusiastic naturalist is a note book. This will be used to make detailed notes of everything to which you apply your attention. In the notebook, for instance, you will write the names of birds you see (or will write down their colourings and manner of flight, so that their name can be found later), state what they were doing, and add the date. These records will be useful for reference later on, when you see a similar bird again.

Don't forget that you will need a pencil, and be prepared by sharpening it at both ends.

Very probably you will decide to save your pennies and buy one or two nature books. In this case, remember to have at least one reference book that is small enough to go in your pocket. A cheap reference pocket book (choose one with coloured illustrations if you can) will enable you to identify strange growths and creatures when you see them. If both notebook and reference book have stiff backs, they will last much longer.

These few articles complete an outfit which will enable you to obtain a great deal of extra enjoyment during your outings.

A Russian Giant

WHEN the introduction of a 2-6-2 tender engine causes such interest to English enthusiasts, what must have been the enthusiasm of railwayists in Russia when they were landed with their first 4-14-4 !

Here are two of the records broken by this Russian mammoth. It is the most powerful locomotive in Europe, and is the only locomotive in the world to have fourteen wheels coupled in one group. These wheels, despite their number, have as large a diameter as 5ft. 3ins., and are expected to forge the engine along at 43 m.p.h. with a 2,450-ton coal train !

To prevent difficulty on curves, the *three* middle pairs of wheels have no flanges—this knocks our models with no centre wheel flanges into a cocked hat ! From chimney to rail the 4-14-4 measures 17½ft., whereas a British engine barely exceeds 13ft. With its twelve-wheeled tender, the Russian loco weighs 328 tons in running trim. The gauge is 5ft.

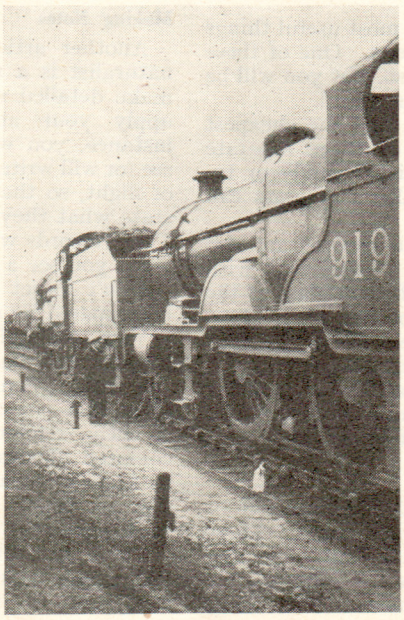
Notable Names

ALTHOUGH it is not possible to keep pace in these notes with all the new-named engines introduced by our four railways, special interest attaching to certain late additions make their mention worth while.

Until recently all the Stanier mixed-traffic 4-6-0's of the L.M.S.R., Nos. 5000-5224, were without names, but two have now been named as follows : No. 5157 Glasgow Highlander " ; No. 5158 " Glasgow Yeomanry". The two engines are both stabled at Glasgow, and are fitted with tablet exchanging apparatus for working over single line sections of the Highland route.

By permission of His Majesty the King, the G. W. R. 4-6-0 No. 6029 has been named "King Edward VIII". This locomotive was formerly "King Stephen", and was exhibited when new as the G.W.R.'s contribution to the Liverpool and Manchester Railway Centenary Celebrations in September, 1930, at Liverpool.

The first of the four further semi-streamlined "Cock o' the North" type 2-8-2's is out of the L.N.E.R. Works at Doncaster, and is named No. 2003 " Lord President". The first of the long awaited 2-6-2 tender engines is said to be nearing completion as we go to press. It is believed that this unusual locomotive will be numbered 637 and named "The Green Arrow."



This is Camera Time

THE hobby of railways is one which is widely vulnerable to the camera. With what method, if any, do you arrange your picture when you have an opportunity of photographing a grand locomotive ?

Whenever possible, follow this tip from the lips of a veteran engineman : "When photographing engines and cows, always get their tops outlined against the sky."

Never mind about the cows, but notice the valuable effect of a background of sky in the accompanying picture of L.M.S. 4-4-0 Compound engines on a Scotch express. When you want to bring out an engine's size, take any view rather than a broadside one. For the picture shown, the camera was placed rather low down, so as to emphasize the giant size of the wheels, conveniently contrasted with the man on the ground.

Parts are Cheaper

BACK in 1926 most model railwayists used to spend happy hours gloating over the many things in catalogues they could not afford to buy. In 1936 the same model railwayists spend happier hours gloating over the many things in catalogues they *can* afford to buy !

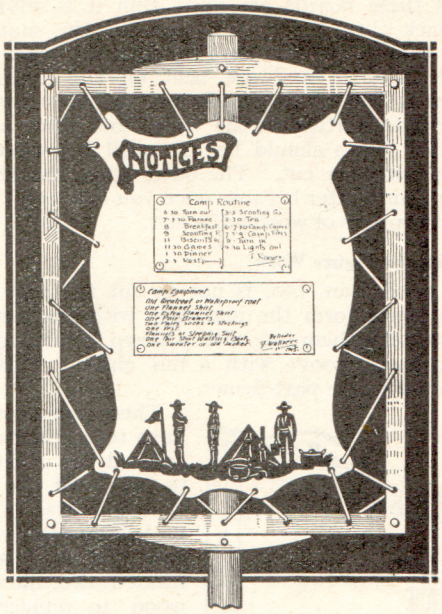
The change is not due so much directly to reduced prices as to the fact that practically everything nowadays can be purchased in parts.

The customer pays less because he saves the firm the trouble of building the articles he wants and, in building them himself, makes a concession to that creative spirit which should be the backbone of the model railway hobby. Buy your rolling-stock in parts !

High Pressure

SCOUT CAMP NOTICE BOARD

Just the thing to cut out in wood from this week's gift chart for use at camp next month. The Design is No. 2127.



MANY of our readers are Scouts or interested in the Scout Movement, and will be keenly anticipating the annual camp. Here is a suggestion for something to make, which will show their prowess and also be of great practical value in the camp itself.

Instead of the usual plain Notice Board why not have one of more unusual design and cut out properly to be a striking and attractive centre point for the orders of the day, the routine programmes, etc. ? The picture shows one which can be made quite easily in wood, and is attractively finished with overlays of the wording and of the camping feature along the bottom.

The whole Board is quite a useful and practical size, and is strung into a frame 22ins. long and 18ins. wide. The whole thing is lashed or nailed to a post or on to a tree stump, as required.

Troop Colours

If the Notice Board is stained a dark brown with the overlays picked out in a different colour, or even left with the wood in their natural state, quite a striking result will be obtained. The framework can, of course, be painted if necessary, Troop colours, or just a plain shade right through.

One of the virtues of the frame is that it can be taken to pieces, the four outer edges simply being held together at the corners by wing nuts and bolts. The board itself is hung in the frame by means of very thick string, or a more suitable effect is obtained by lashing it with the leather boot laces obtainable. These are strung and look quite in keeping with the use to which they will be put.

Materials Supplied

Further to help the worker, full size patterns are provided on the design sheet, and a special parcel of materials is offered complete for 3/-. This parcel contains deal for the rectangular frame, a large piece of plywood to form the board, and plain padouk the necessary thickness for the thin overlays.

There has not been room to show the main frame full size, but it is a simple matter to mark off the strips required, according to the dimensions given. All these pieces for the frame are cut from wood 1in. wide and $\frac{3}{4}$in. thick and the holes are bored with a $\frac{1}{4}$in. diameter drill. They are correctly spaced as shown, and it will be noted the holes are different in the top rail from the bottom.

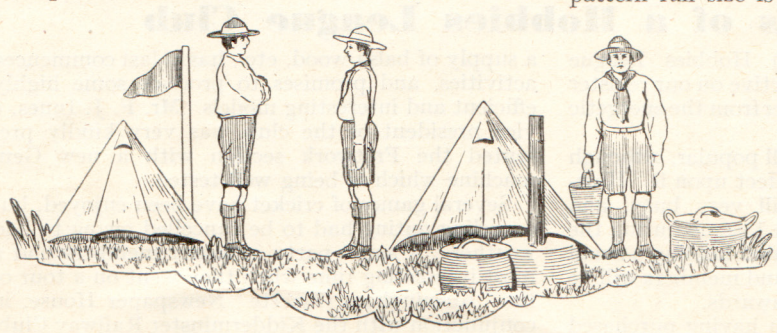
Collapsible Framework

The four parts are held together by a lap joint at the corners, and this can be quite easily undertaken by any amateur carpenter or fretworker. The detail shown on the design sheet illustrates exactly how the parts are to be cut, and when they are completed the corner hole at A and B is bored to take the suitable wing nuts and washers for fixing together.

Put the bolt through with one washer behind the head. The other washer is added the reverse side of the frame so it comes against the wing nut when that is screwed home.

The handle to the top rail as shown on the pattern full size is cut from $\frac{1}{2}$in. wood and then glued and screwed in place. The screws pass down at an angle as indicated by the dotted lines. Round head screws can be added, and they should be $\frac{3}{4}$in. long.

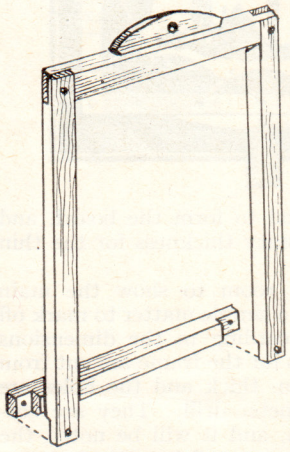
The overlays of the wording and the camp scene must be cut from the design sheet, and the parts pasted to a piece of 1/16in. wood with the grain running in the direction indicated by the arrow.



As these boards are quite thin it is advisable to back them up with a piece of ⅛in. material. Nail this to the thin stuff by fretnails which pass right through, and are bent on the underside. Three or four of these nails can be driven through the waste portion of the wood, and these actual interior pieces should be left until last when the other parts are cut. The outer edge, too, should be left until later because once you cut round that, the two pieces of wood fall apart.

Cutting the Figure Work

A good plan, too, is not to cut the very thin lines which form the markings with the fretsaw, but to take them out with a sharp V-carving tool or make a groove with a fine chisel. This will keep the whole part firmer.



How the frame is fitted

These overlays will have to be cleaned up carefully in order not to break off the very thin material of the projecting pieces. A good plan is to use the framework of the waste wood to replace the actual part in, then to glasspaper the whole of it.

Nail the framework down to the bench so it is firm, then put the camp scene panel back in place. Be sure to keep the glasspaper on a piece of flat wood, and do not press too hard or it is apt to pick up one of the fine projecting points.

Those who are artistic with their brush may like to cut the camp scene out in whitewood then paint it up with enamel or ordinary paints. A very realistic piece of work can be completed in this way, and your own particular patrol flag and colours can be added.

The word " Notices," of course, is cut comparatively easily, and here again the artist may like to paint in the letters with gold or silver, or even black or colours.

Both these overlays are glued to the back, which is the actual notice board of plywood. The position of the overlays is given by dotted lines, and it is a simple matter to prick these positions off so they still can be seen when the paper of the board has been cleaned off.

Of course, you can save the trouble of pasting and cleaning off the paper for the board by taking a tracing of the outline, and in doing this do not forget to indicate the circular holes which will hold the notice board in its frame.

Saving the Pattern

You can lay the design pattern on to the wood with a piece of carbon paper between the two, then go over the outline carefully with a hard, sharp pencil. This will put the shape on the actual wood, and it is then a simple matter to cut out the outline required.

The holes for the string should be bored with a 3/16in. bit to get them clean and true, then the whole board itself thoroughly cleaned up back and front.

A suggestion for staining and colouring has already been given, and this should be decided upon and done before the overlays are glued on.

The edges of the plywood should be treated with black paint or enamel in any case, and as the whole thing will have to stand the open air and all kinds of weather possibly, it is best to put a coat of varnish over the whole thing and over all the parts. This will preserve it from the rain, and overcome any likelihood of the plywood layers coming apart.

A Picturesque Feature

A detail of the manner in which the frame is joined is given herewith, and we also illustrate a suitable method of finishing and shading the camp scene figurework which is cut out for the bottom overlay. If you prefer, this can be cut from ivorine or sheet bakelite, or something which is not so fragile.

Or again, you can cut the overlay in two pieces by running the saw through about half way along between where the tent and the Scout is standing. This will make it easier to cut out, and the single sawcut provides an easy matter of joining up when the whole lot is glued in place again.

MATERIALS

For making this Board we supply a parcel containing plywood with Deal for frame and Padouk for overlay, also four Bolts and Wing Nuts with metal washers. 3/-, post free 3/9

Activities of a Hobbies League Club

THE Wednesbury (Staffs) Hobbies League Club is one of the most active on our register as seen by this recent letter from the energetic secretary A. L. Morgan :

" The Fretwork Section is still popular, although the summer is having a little effect upon it. However, several members are still very busy, and quite a number have joined the League during the last few weeks. It is contemplated holding a small exhibition towards Christmas, and members will be preparing for this from now onwards.

The Model Aeroplane Section having purchased a supply of balsa wood, etc., has at last commenced activities, and promises to produce some highly efficient and interesting models. Mr. F. J. Innes, a vice president of the club, has very kindly presented the Fretwork section with a new Gem machine which is being well tested.

Several games of cricket have been enjoyed, but a cycling outing had to be cancelled owing to bad weather. A small party of senior members had a most interesting time when they went on a tour of the ' Birmingham Gazette ' Newspaper House, in conjunction with the Kidderminster Railway Club.

BROMIDE PAPER AND ENLARGEMENTS

BROMIDE printing paper is similar to gaslight paper in appearance, and in its general method of working, but it is far more sensitive to light and so cannot be used in an ordinary room. It is not as sensitive as a film, however, and only requires an orange light for safe manipulation.

Most dark-room lamps have a sheet of yellow glass, which can be inserted when working this paper, but if your lamp is not so supplied the red glass will do. With this, however, it is rather harder to judge when a print has received the right amount of development.

Because of its speed, bromide paper is used for enlarging and this week we are describing how to work the material, as well as how to employ it in making enlarged pictures with the apparatus detailed in the previous article, for the making of an enlarger.

Sizes and Grades

First we give an idea of how the paper is worked. Bromide paper can be bought in the standard, and bigger dimensions. Postcard size is very handy for enlarging from negatives around V.P. and 3¼in. by 2¼in. Most of the packets cost 1/-. Grades (as with gaslight paper) are, 'contrasty' for very thin negatives, 'medium' for ordinary density, and 'soft' for thick opaque negatives. To start with, get a packet of 'normal'.

Slow Development

As with gaslight, there is apparently no difference in the paper after the exposure, (which may be by contact or through the enlarger) has been made, but as soon as immersed in a developing solution the image starts to appear. It is much slower, however, in coming up than gaslight paper. Development is complete in about three minutes, the density being judged by looking through the print held up before the lamp. Finishing development, the paper is slipped through a dish of clean water and into a hypo bath for fixing.

Thus it will be seen that three dishes are needed on the bench for developer, clean water and fixer. The developer is the standard "M.Q." beforementioned, which is obtained from the dealer in threepenny packets. It is dissolved, however, as though for films, viz., in 10 ozs. of water.

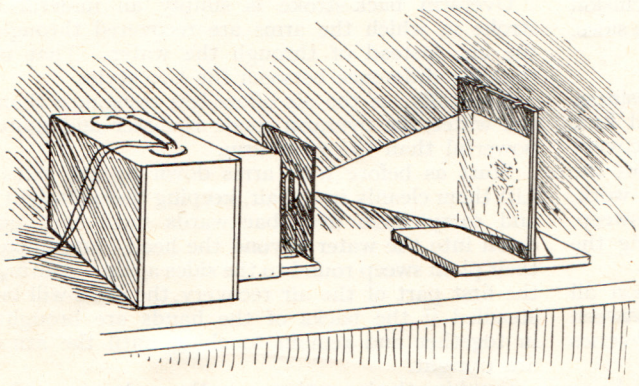
The fixer is 2 ozs of hyposulphite of soda to 7 ozs. of water.

After fifteen minutes in this last bath, the prints are put to wash for one hour, during which time they must be kept on the move. About every five minutes bring the bottom ones to the top. After this operation they can be dried in the usual way.

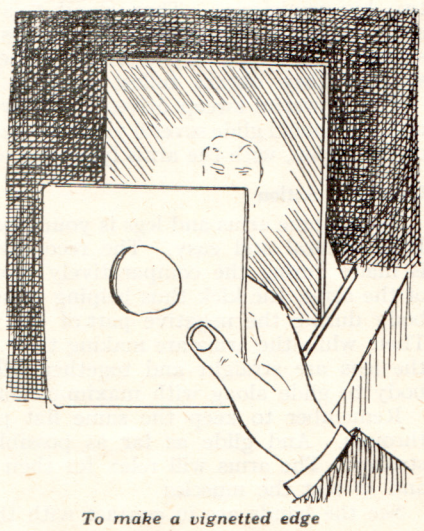
The Enlargement

So much, then, for the general manipulation of the paper ; now for making an enlargement. First get everything to hand. The enlarger and the easel are arranged as shown, with yellow light near, so you can see the easel as well as the dishes.

Insert a negative of normal density in the "sandwich" of card and slip into the runners. Also place a plain postcard in the easel with its edge coming flush with the edge of the glass. It will push in without undoing the clips. This is to



The arrangement of apparatus for enlarging



To make a vignetted edge

focus on and its position is to enable a sensitised P.C. (or sheet) to be placed in the same position easily.

Switch on the lights in the enlarger. A blurred image will appear on the screen which can be sharpened up by pushing the easel further away or bringing it nearer.

At the first attempt, the size will probably be all wrong, but by pulling the camera further from the negative and bringing the easel nearer, the picture can be made smaller and sharp. A larger image is obtained by pushing the camera nearer to the negative and running the easel back.

Almost any size can be obtained this way. Do not necessarily enlarge all the negative, but pick out that part which seems the most interesting, and, of course, see that it sits within the P.C. area.

Trial Exposures

Now switch on the enlarger lights and by the yellow lamp cut a sensitised sheet into three strips, these are for testing. Slip one piece gently in between glass and board and switch on the light.

Have a piece of card handy and expose the strip in three sections giving 10 seconds to each. That is, cover two-thirds of the strip first and give 10 seconds to the exposed third. Draw the card back, exposing another third, and give this 10 seconds also. Then take the card right away to give the whole area a final ten.

Developing

Thus the first part of the strip will get 30 secs., the second 20 and the third 10. These exposures may seem rather long compared with a direct light enlarger, but this is due to the fact that the apparatus projects the image by reflected light only.

Having exposed the strip, develop for a full three minutes, rinse and place in hypo for a few moments, then take to a bright light. One of the sections will be the best, and if not absolutely perfect, will at least indicate about what the correct exposure should be.

Do the timing by a clock or watch as this means you can reproduce the same exposure exactly or add (or deduct) a little with certainty.

If things are very far out make a second test strip. Once you have an idea of exposures you will be able to approximate the number of seconds that will be needed without the trial strip.

Having decided on the correct exposure, insert a full sheet of sensitised material, switch on the light for the desired time, switch off, take out the paper and develop and a good enlarged picture should result.

Helpful Points

Now for one or two points. Never shake the easel or the camera during the exposure. It is best not even to walk about the room as vibration may easily cause blur. If the negative is very dense it is advisable to focus up on a thinner one and then insert the denser.

If one part of the negative is very dense it can be "printed up" by holding a piece of card with a hole in it between the camera and the easel. The light from the hole will fall on the dense part only, which can then be given a few seconds longer exposure. Keep the card on the move, however, to prevent sharp edges appearing.

Faded Edges

"Head and shoulders" may be given that fading away appearance by this method, the image of the head coming through the hole in the card. The movement gives the fading borders.

Above all, with bromide paper, get the exposure right and keep the developer fresh and satisfactory pictures will be yours from the start.

Swimming—(*Continued from opposite page*)

outwards, and round to the sides of the body, in two big semicircles. Throughout this drive the arms are never more than a few inches under the surface, and the palms are always turned squarely so that they obtain fullest pressure.

This powerful sweep drives the body head-first, and you should glide several yards at the conclusion of the action, with the arms lying still at the sides.

Combined Action

To combine arms and legs is your next business. It is natural and easy. The recovery and kick is made during the comparatively slow recovery of the arms, the kick thus helping to support the body during the negative part of the arm work. Then, while the arms are making their big sweep, the legs are straight and together, allowing the body to glide along with maximum ease.

Remember to keep the same flat position all through. And glide as far as possible between strokes. The arms will relax for their recoveries and so rest the muscles

See the hands are in contact with the body as much as possible while they are sliding back for their new pull, for this will ensure that resistance is reduced—if the elbows spread widely outward they will check the body.

Overarm Back-stroke

Overarm back-stroke is simply an underarm stroke in which the arms are recovered through the air, instead of through the water. That is the only difference between the two styles.

Naturally, as the air offers less resistance than the water, the overarm mode is faster and more powerful than the underarm.

Start as before with arms down by the sides. Lift them cleanly in the air, keeping them straight, and carry them over backwards until they go down into the water beyond the head—and make their plain sweep round to the sides again. During the first part of the air recovery, the arms will be steadied if the backs of the hands are brought in together and remain touching until the arms are upright.

Combine the leg action as in the underarm style.

SOME FORMS OF BACK SWIMMING

THERE are many forms of back-swimming, and no one is really competent in the water until he has mastered the principal styles. You have already learned the simplest—sculling back-stroke. That will have laid the foundation for the new styles to be tackled this week.

Here are three new methods of swimming. That may sound rather overwhelming for one week, but the three styles are so closely connected that the task of learning them is not nearly so long and arduous as might be imagined. First you will master life-saving back-stroke, then underarm back-stroke, then overarm back-stroke.

Life-saving Back-stroke

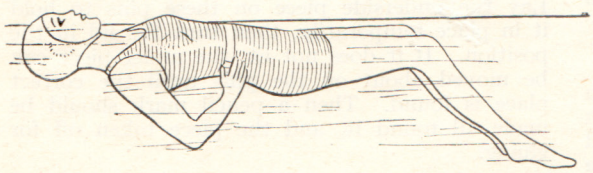
This most valuable of back-swimming methods is used for the principal methods of towing another person, and is the foundation of life-saving work. It is actually very easy, because the arms are not used at all and you have merely to acquire the kick. Even this kick will give you little trouble, for it is practically the kick of breast-stroke, upside down.

Lie on your back therefore, sculling to keep yourself comfortably afloat, and keeping the legs straight and together just below the surface. Have the chest high and the head leaned right back so that the ears are immersed and even your forehead is awash.

The Leg Work

Now begin the leg action. Bend the knees, letting the lower parts of the legs sink until they are hanging down at right-angles to the surface, with pointed feet. The knees can spread about six inches apart during this recovery movement.

As soon as the legs are properly down, kick them



The position in the Life-saving Back Stroke

upwards and outwards with fullest vigour. They straighten as they rise, and at the conclusion of this kick are again at the surface, but this time spread widely apart so that the whole body has the form of a letter Y.

There is no pause at this point however—the legs immediately sweep in together, as strongly as possible, until they are once more side by side, with pointed feet, ready for a new kick.

It will be seen that though the recovery or drawing up of the legs is not the same as in breaststroke, the kick itself is practically similar. In fact the whole action would be exactly the same if it were not for the fact that drawing up the legs in the breast-stroke fashion would push the knees out of the water and so sink the middle of the body.

The effect of the kick is to propel the body head-first. There is opportunity for a glide when the legs have swept in together, and in the later forms of back-stroke full advantage is taken of the impetus gained.

But in life-saving work the glide is not practicable, so you had better accustom yourself to a continuous action, making a new kick as soon as the legs have closed.

Life Saving Strokes

As you get used to the stroke you will cease sculling with the hands and depend entirely on the work of the legs. Your arms can be held in any fashion you please. At first you may like to have your hands on your hips, with elbows spread widely to assist balance. Later you will prefer to fold the arms over the chest. Alternatively they may be allowed to trail at the sides, or be clasped under the back.

Be very careful in this back-swimming to keep the proper horizontal position—head back; chest bulging from the surface; stomach awash. This straightness does not belong to the sculling back-stroke, or to back-crawl which you will learn later, but it is an essential quality for the back-swimming methods which are described here this week and which all use this same type of kick instead of a thrash.

Arm Action

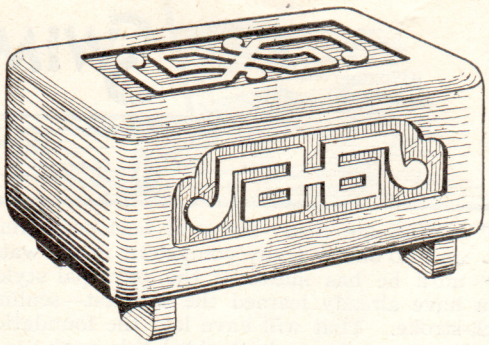
Next you will learn the arm action necessary to bring your life-saving breast-stroke into underarm back-stroke. This latter style is almost like an inverted breast-stroke—with this difference, that the arms will now be carried right round to the sides instead of stopping short at the shoulder line or rather before it.

You will begin with the arms lying down by the sides of the body. They recover under water, by gently doubling back, with elbows bending outwards, and so sliding up the sides of the body until they can be pushed beyond the head.

When they are at full stretch past the head, the palms should be facing outwards. Next the arms, remaining straight and rigid, sweep

(*Continued on opposite page*)

A SIMPLE SMALL BOX



For full size patterns see page 415

THERE are often times when the worker wants a little odd job to use up some spare pieces of wood and a half hour or so. The box illustrated is just the type to fulfil these needs, and the full size patterns provided on page 415, make the work much more straightforward.

The Box is one of those useful articles which can be used on a number of occasions. It is suitable for any lady's dressing table to hold odds and ends of trinkets or is equally applicable for a gentleman, in which to keep his studs, links, pins, etc.

Even for the dining room it forms a useful little receptacle, and is altogether one of those boxes which can be made up as a gift, or by the dozen for sale at charitable bazaars, etc.

Wood to Use

It should be completed in satin walnut or similar fancy wood, but before starting you must decide how to cut the fancy decoration on the side. Patterns for this decoration are shown in the actual position. The way in which it is used must be decided first.

The illustration shows this ornamental scroll work as recessed carving, and if this is being undertaken the whole of the pattern is pasted down as it stands.

Suggested Decoration

An alternative method is to treat the pattern as an overlay, in which case it must be cut from the shape of the sides and pasted on a separate piece of 1/16in. or ⅛in. wood.

Yet another method is to have the side itself in ¼in. wood, to put an overlay in ⅛in. wood from which the whole centre aperture is cut, then the decorative pattern can be reproduced on a piece of 1/16in. wood cut as an overlay and glued in the recess in the side.

In Metal

Those who prefer, too, can cut the overlay in metal or some of the composition material such as bakelite, xylonite, ivorine, etc. which will stand up very strongly against the background of the natural wood. In any case, the whole of the box should be polished before these overlays are added.

If the work is done in carving, the recessed portion must be cut out carefully and is afterwards roughed up with a matting tool, whilst the surface of the decoration is left plain. If the design is used as an ornamental overlay, a good plan is to cut it from some distinguishing wood which will contrast strongly.

The construction of the box itself is quite straightforward, and consists of four sides, a top and bottom and two strip feet. To make a sufficiently solid box all the parts should be cut in ⅜in. wood. This will provide a substantial surface for gluing, and allow the corners to be rounded off nicely as seen in the picture.

The Construction

Two sides and two ends are required, the latter being glued between the former and all fixed upright to a solid base. This base is cut to the outline of the pattern shown, and has no interior decoration. The top is a similar size but contains the ornamentation shown on the pattern.

When the box is put together, all the corners should be rounded off with file and finished with glasspaper. The top is not glued on, but is held in position by fixing an underpiece which just fits into the opening of the top itself.

The Lid

Measure up carefully the interior size of the box, cut out a piece of ⅛in. wood, then glue it to the underside of the top so that piece comes in its proper position in conjunction with the sides.

The exact position can be obtained in this way. Drive in two or three short pins on the underside of the top, leaving them projecting about 1/16in. Lay the underside piece on these pins to hold it in place temporarily, then turn the lid in the position. If it does not fit, the under piece can be moved about on the pins until the correct place is found. Then a pencil mark should be made all round it, and the piece taken off for gluing.

Hinges

Or, of course, the lid can be hinged in place by fixing two ¾in. hinges along one side. In this case, a recess must be cut as shown in the detail, to allow the flange of the hinge to bed itself comfortably into the wood with the knuckle projecting just beyond the outside.

Particulars of our Photographic Competition are given on page 406 of this issue

SUMMER FISHING HINTS

MANY anglers look forward to the summer holidays, when for a few weeks they are free to rove along the riverside with rod and line. During July, August, and September, happily, all kinds of fish are "in season." Trout and sea-trout will engage the attention of those who are able to indulge in fly-fishing, and many species classified as "coarse" will be the quarry of the float-fisher.

As fly-fishing is only for the few, we just mention it in passing, and devote our remarks here to the general angling that is procurable during the summer vacation.

Lusty barbel, broad-sided bream, giant carp, "silvered o'er with age," wary chub and bright-eyed perch, silvery roach and dace and golden rudd, not forgetting the dark-finned, olive-hued tench; all these will give good sport.

The Roach

This, perhaps, is the most familiar of all "coarse" fish; indeed, the humble float-fisher would do badly without this prolific fish, which is so widely distributed in river, canal, mere, broad, lake and farmer's pond.

In summer, when the water is crystal clear, roach are shy and you will need fine tackle—4x or even 5x gut for the hook length. Any light cane rod will do, with a "Nottingham" reel and fine silk line. Floats should be of crow quill or porcupine. When the river is bright as gin, the finer and lighter the tackle, and the fewer shots used to "weight" the float, the better.

Fish fairly close to the bottom, adjusting the float so that the bait trips the bed of the swim or is just an inch or so above it. Fish quietly, and avoid undue splashing, and don't poke your head every few minutes over the pool.

Good summer baits for roach include gentles (maggots), caddis grubs (straw-baits), wasp grubs, baked for a few minutes in a moderate oven, and "silk" weed. A well-baited hook (No. 14 or 16), "trotted" down a nice swim, will account for a fish or two almost certainly.

A favourite haunt of roach in hot summer days is close by a weed-bed in a patch of clear gravel. Roach during August and September often prefer creed wheat to other baits; stew the wheat corns in a jar until they crack and show the white kernel. Hemp seed is also effective.

Dace

Here is another excellent summer fish, a bright and lively quarry, giving sport on similar tackle to that recommended for roach. Dace prefer shallower waters, and are often found in mill-streams, and fast runs below mill weirs. Like roach they move in shoals; where one is caught, others may be taken.

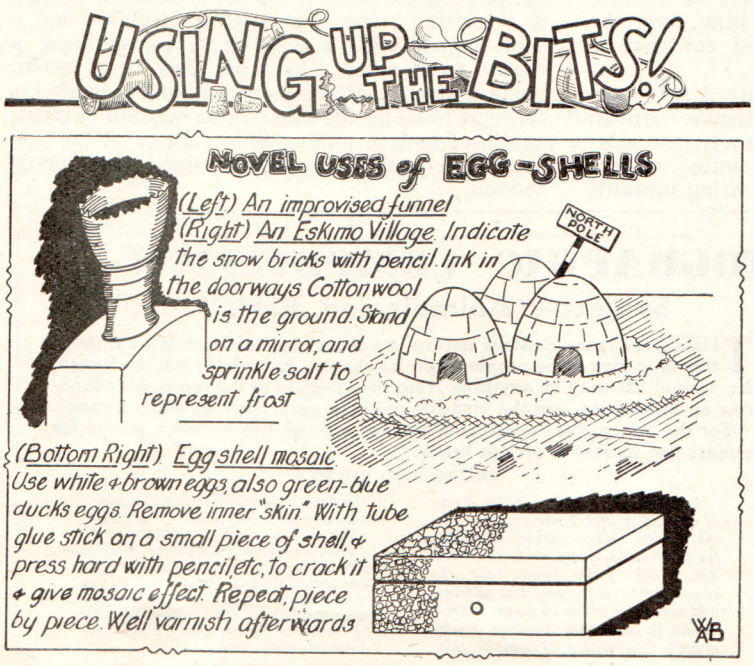
Dace feed not only on the bottom but at the surface, and anywhere between these two points. It is advisable to move the float up and down the line until you have found out whereabouts they are; you will find it a good tip to vary the depth you are fishing at.

You need a smallish hook—No. 16—unless the fish in your particular stream run large, then a No. 12 will be best. "Swimming the stream" with light float tackle is the nicest method, but some anglers adopt the "laying-on" method, or ledgering.

Floating a bait down a nice steady run of clear water, with a tiny float to indicate a "bite" is the pleasantest way. For baits, try maggots, small red worms, caddis, wasp grubs, pearl barley and paste.

Tench

These are pond fish, and occasionally found in sluggish rivers and in canals. You need stacks of patience. However, if you arise before the skylark on a July morning, get down to the pond or lake at grey dawn, set about your job secretly, you may, with luck, account for a few tench—big fish that may weigh anything from 1lb. to 4lb. or even more.


USING UP THE BITS!
NOVEL USES of EGG-SHELLS
(Left) An improvised funnel
(Right) An Eskimo Village. Indicate the snow bricks with pencil. Ink in the doorways. Cotton wool is the ground. Stand on a mirror, and sprinkle salt to represent frost
NORTH POLE
(Bottom Right) Egg shell mosaic. Use white & brown eggs, also green-blue ducks eggs. Remove inner "skin" With tube glue stick on a small piece of shell & press hard with pencil etc, to crack it & give mosaic effect. Repeat piece by piece. Well varnish afterwards
WB

Bait your hook—a No. 9—with brandling worm or red worm, and fish in the open spaces between weed-beds. Try raising the bait if you do not get bites when fishing dead on the bottom.

Strong Tackle

You need strong tackle—2x gut casts or their equivalent in substitute gut, with hook lengths no finer. Unless it is windy use a "self-cocker" float and one shot only. Do not forget to give the fish time—tench bite shyly, and the float will bob several times before it begins to slide along the surface to dip under. Do not strike until the float tip has disappeared beneath the surface. Take a landing-net, as a big tench may get to weed if you have to let him run. Tench are good fighters. In addition to the baits recommended, try lawn worms, slugs, caterpillars, wasp grubs, honey paste.

Carp

These fish are similar in haunts and habits to tench, and the same methods and baits will suffice to catch them. Only you may have to exercise even more patience! Carp often feed at night during high summer—when night-fishing you need strong tackle, the gut-cast being no finer that 1x.

Be quiet, keep out of sight, and fish well on the bottom. Ledgering is often a good method.

Bream

The haunts of bream are slow streams, and these fish are most abundant in the rivers and drains of Fenland. They are also very numerous on the Norfolk Broads, where anglers frequently catch them by the stone, and sometimes by the hundredweight. They are of good size.

Bream should be ground-baited for—that is, before starting to fish, throw plenty of ground-bait, made of soaked bread and bran, into the spots you intend to try. Crushed cow-cake is also used.

Bait your No. 9 crystal hook with a red worm or a dew worm, and use fairly stout tackle. Bream bites are of varied types—the leisurely, the side-long, and the "rising" bite—the latter when a bream has taken the bait and is soaring upwards with it. Give a bream plenty of time before you strike! Swimming the stream with floats tackle, and light ledgering are the best methods.

Perch

Here is the liveliest of all the coarse fish, and the boldest. If there are perch in the river or lake where you are permitted to fish, be sure and try for them. They will readily take a worm or maggot fished on a No. 8 or 9 hook, on fairly strong tackle.

Float-fishing and roving from place to place is a good procedure; if perch are about they will soon register their presence. They take a bait boldly, and you need not be in a hurry to strike; the float will bob several times ere it goes under, and once a perch has seized hold of a worm he does not readily let it go.

Perch roam in shoals, and where you catch one there will be his pals present—try and catch them, before moving on.

Rudd

These beautiful golden fish are well worth trying for in summer, when they will take a small artificial fly—a red or black palmer or any dark-hued fly. It is the usual thing to stick on the hook of the fly a maggot or tiny strip of white kid or wash-leather.

You need a fairly long rod of greenheart or split-cane—10ft. 6ins. or 11ft.—and the reel-line and cast should be tapered, as for trout, and the line treated with "Mucilin" or other similar preparation.

Chub and Dace

Chub and dace also take a fly well on occasions during hot weather. Chub are extremely shy, and great care must be exercised when approaching the verge of the stream, whether you are fly-fishing or "trotting" the swim with float-tackle and a hook baited with a wasp-grub, or, perhaps, a cherry from which the stone has been taken. Summer fishing affords great fun, and it is always pleasant to be by the side of a stream full of trout, and have luck in pulling them out, or at the side of a weir-pool where roach, dace, and perch abound.

JULY PHOTOGRAPHIC COMPETITION

Subject—"Animals and Birds"

THERE are many budding naturalists about, and this month's competition is to give these people a special chance. Everybody can try though, for animal life may be anything from the elephant at the zoo to a browsing cow or white mice, and the bird-life pictures cover just as wide a range. For the best picture portraying bird or animal life we offer prizes for seniors and juniors as set out below.

PRIZES AND RULES

In the Open Section a 1st Prize of £1 and a 2nd Prize of 10/-. In the Junior Section (those under 16) the 1st Prize is 12/6 and the 2nd Prize 7/6. Each print must bear the competitor's full name and address, and his age, if under 16 years. Entries should be addressed Amateur Photographic Competition, Hobbies Weekly, Dereham, Norfolk, and must arrive not later than July 31st. The Editor reserves the right to publish any entries he wishes in Hobbies Weekly. No competitor to take more than one prize during the season. If a stamped addressed envelope is sent with the entries every endeavour will be made to return them, except the prize-winning ones.

CLOSING DATE JULY 31st.

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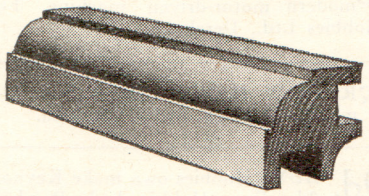
$\frac{3}{16}$in. GROOVE
PINE
1d. Per Foot.
OAK
1½d. Per Foot.

No. 46.
¼in. GROOVE
PINE
1½d. per foot.
OAK
2d. Per Foot.

No. 47.
⅜in. GROOVE
PINE
2d. Per Foot.
OAK
2½d. Per Foot.

Postage is extra to above prices.



The moulding is obtainable in any length and is quite easy to cut and trim. In ordering by post keep the lengths as short as possible. It is also obtainable in mahogany with a square back, particulars and prices given on application. Make a box now and see how easy it is.

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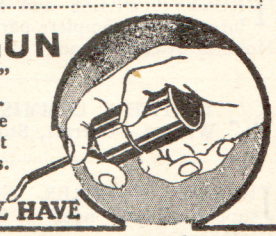

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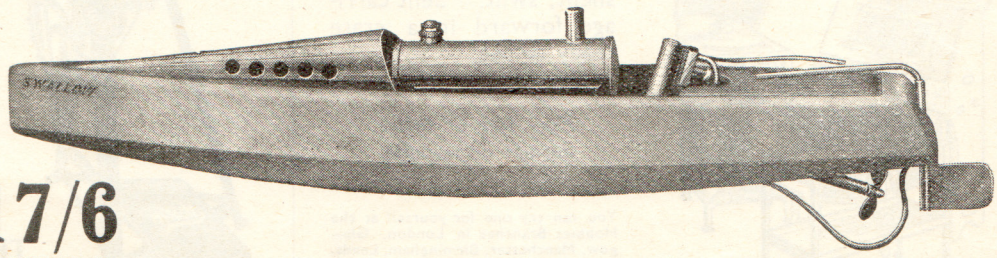
Beam 3½ins.



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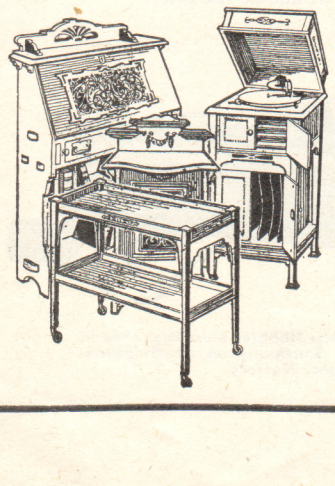

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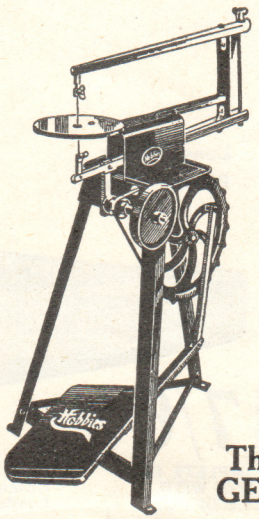
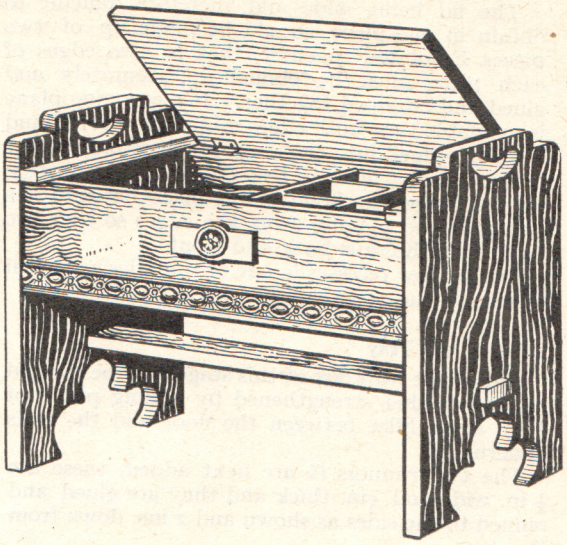


The GEM

A WORKBOX AND SEAT



WE are giving our workers this week another piece of useful furniture. This is for the Workbox Stool shown in the sketch on this page, and the overall sizes are, length, 19½ ins. width 10 ins., and height 18 ins.

The interior is fitted with a loose tray which slides along the length of the stool, small fillets or runners being screwed to the sides 2 ins. down from the top. The two ends are shaped top and bottom with the fretsaw, and a handle-hole is formed in each piece to facilitate lifting from place to place.

Such a piece as this must not be overdecorated, and the two strips of moulding along the sides, and the little rosette suffices to overcome any undue plainness.

The Ends

Two boards planed square and afterwards cut to the shape shown in Fig. 1 must first be prepared as ends, the setting out of the circles at the foot of each piece being clearly given in figures, the compasses being set to strike circles of 1½in. radius from all the centres. A mortise has to be cut in each piece 1½ ins. long by ½in. wide, to take the stiffening rail which is shouldered in as Fig. 2 illustrates. A coarse grade fretsaw should be used for the cutting so the work may be done quickly and cleanly, all the cut edges being afterwards papered up with fine glasspaper.

Having finished the ends so far, measure up from the foot end of each piece 9½ ins. which will mark where the sides will come. These latter, marked B, will be planed and squared up and bored for 3/16 in. dowel pins as shown.

The pins should be 1 in. long, and glued and driven in ½in. Lay the sides in position on the ends and to the 9½in. lines already made and tick off on the sides where the dowels will come and bore the holes ½in. deep.

Knock the sides on to one of the ends and then add rail C adding of course a little glue in the joints, then put on the other end and clamp all together to hold the joints firmly until the glue has hardened.

The floor consists of ¼ in. Plywood, and this should be measured for and marked out and cut. Four countersunk screws run through into the edges of each side should hold it well, and to hide the cut-edge of the plywood a piece of No. 135 moulding is put on, this is clearly indicated in Fig. 2 where a portion of the moulding is shown cut away.

The Lid

As it is not advisable for the lid to close down tight against the ends, two narrow rails, F have been added, one each end and on top of the sides as in Fig. 2. Screws, countersunk into the sides and through ends into rails make a good stiff job.

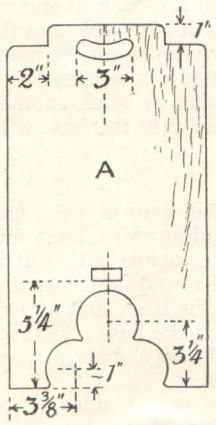


Fig. 1—The End Shapes

CUTTING LIST

A—2 ends 18ins. by 10ins. by ¾in.
B—2 sides 18ins. by 6ins. by ½in.
C—1 rail 20ins. by 2ins by ½ in.
D—1 floor 18ins. by 9½ins. by ¼in. (Plywood)
E—2 pieces 16ins. by 5ins. by ½in.
F—2 rails 10ins. by 1in. by ½in.
G—2 pieces 18ins. by ½in. by ¾in.
H—3 pieces 7¾ins. by 1½ins. by ½in.
I—2 pieces 7ins. by 1½ins. by ½in.
J—2 pieces 6½ins. by 1½ins. by ½in.
K—1 floor 8½ins. by 7ins by ¼in. (Plywood).
L—1 piece 5ins. by 2ins. by ½in.

Moulding No. 135
2 pieces 18ins. long
3/16in. dowelling - 18ins required.
½in. angle fillet 2 eet required.
1 ornament No. 221 (1½in.)

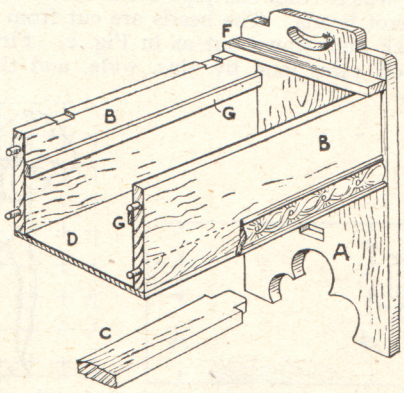


Fig. 2—Showing general construction of framework

The lid being wide and therefore difficult to obtain in one piece, should be made up of two pieces E jointed together, that is, two edges of each piece must be planed up accurately and glued and cramped together. If a grooving plane is available then both edges might be grooved and a tongue glued into each. A much stronger joint is thus made. Finally test the lid before putting on the hinges by laying it in place between the side rails and planing away the edges so they are flush with the rails back and front.

Cut shallow recesses in one of the sides as shown to receive the 1¼ in. hinges.

Runners and Tray

The whole workbox at this stage may be cleaned up and further strengthened by adding pieces of ½ in. angle fillet between the floor and the ends underneath.

The two runners G are next added, these are ½ in. wide and ⅜in. thick and they are glued and pinned to the sides as shown and 2 ins. down from the top.

The tray must be made accurately and to fit easily between the sides so that it will move about freely. Fig. 3 shows the construction of the tray and how the various members are glued up. Each of the partitions is halved slotted together as shown in the enlarged detail in Fig. 3 and are pinned through at the sides. Clean up all the edges of the tray and take off the sharp corners.

The finishing polish may be either brushed on or put on with the proper polishing bob, the latter giving by far the best result. A splendid polish can be got by using Hobbies Lightning Polish at 10d. and 1/8 per bottle.

It should be noted that the overlay bearing the rosette on the side of the box must not be put on until after the polishing has been done, and that the moulding and rosette require to be done with a fine brush.

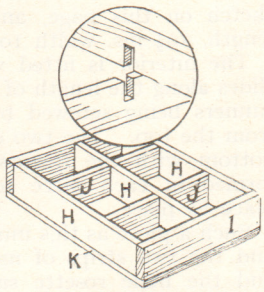
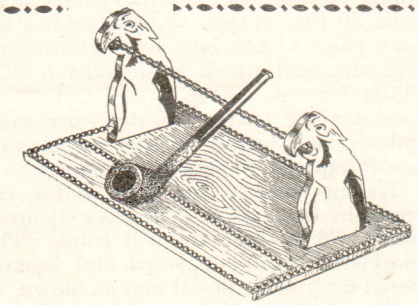


Fig. 3—Details of the box

NOVEL PIPE HOLDER



THE novel pipe stand illustrated, is just the thing for a smoker friend, and the article can be turned out quite quickly and at so little cost in material, that it is well worth while to make a number for selling. The stand is most handy for use when sitting and doing work at the table, for instead of placing the pipe on the cloth, it is rested in the rack as shown.

Commence on the base which is made in wood ¼in. thick and indicated in Fig. 1. Cut the wood 8ins. long by 5ins. wide, and carefully cut the two slots 1in. long by ¼in wide, a distance of ¼in. from the sides and 1¼ins from the back edge as shown in the detail.

The sides of the stand which support the bar on which rests the pipe stem are in the form of parrot heads. The heads are cut from wood ¼in. thick and drawn out as in Fig. 2. First cut the wood 4½ins long by 3ins. wide, and then divide the face into ½in. squares. Carefully draw the shape of the figure from the details in Fig. 2. and then mark off and cut the tenon on the bottom 1in. wide by ¼in deep, ½in from the back as shown.

Carefully cut the outline with a fretsaw, and the markings on both sides of each figure can be made in coloured enamel. Or if made in whitewood, a nice effect is gained by marking in black enamel. When made, the sides are fixed into the base with a little glue.

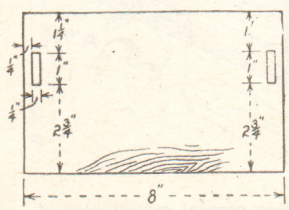


Fig. 1—Details of base

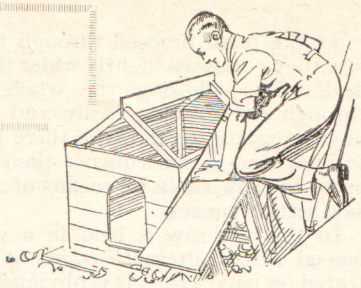
Fig. 2—The Sides

Fancy Bars

The bar which supports the stem of the pipes is a piece of ¼in full-round beading 7½ins. long, and this is fixed in the beaks of the parrots with a little glue. Strips of 3/16in. half-round ball beading are fixed round the edges on the base, and a piece of the same material is fixed on the base a distance of 1in. from the front, which forms a shallow space where the bowl of the pipes rest.

With the exception of the parrot sides which are finished in the manner described, the remainder of the pipe stand is well polished and stained.

THE USE OF SAWS



PROBABLY the tool which our readers use more than any other is the saw, and strange as it may seem, there are so many varieties it is questionable whether any reader or worker has them all. Mention of the saw, may call to their minds such common or garden ones as the handsaw, the tenon saw and, of course, the fretsaw.

These are probably known to everyone, but when it gets down to such varieties as a compass saw, a pad-saw or a bow-saw, the matter may seem to be getting a little more involved.

Most of us, however, know the elementary principles and demands of the tool itself. It is simply to cut through a board in a clean, workmanlike method, and for this the ordinary handsaw is the best tool. There are, however, occasions such as cutting curves, angles and interior shapes where a different type is demanded, and for this reason the variety mentioned has come into being.

Good Steel Essential

How or when they started is a matter of history, but undoubtedly the Egyptians of the early days had their primitive methods of cutting both wood and stone for their requirements. Naturally with the progress of time a better tool was evolved, and today the best saws are made from very fine quality hard steel with an edge which will cut through even the toughest wood.

It is, as in all other instances, a mistake to obtain an inferior saw and expect it to cut smoothly and correctly. Cheap steel looses its edge and in consequence, requires sharpening much more often than a good class tool. A large handsaw, for instance, may look quite good even if in a cheap quality, but you will find it buckles and refuses to remain straight in use, or that the teeth become blunt and refuse to function.

Get the Best

The worker is advised, therefore, to obtain the best value for money he can, and to pay a reasonable price for any saw he may purchase. The same applies to fretsaw blades, which are probably the tiniest things in this particular line. Obviously cheap blades cannot be made from the same quality steel or pass through the process of sharpening that the more expensive ones have.

If you buy a cheap fretsaw blade, it will loose its sharpness very quickly, and be much more liable to snap at the first operation than will one costing a little more. In the end, therefore, you are much wiser in buying the good quality.

Let us look at some of the more common varieties of saw, and note the requirements of them.

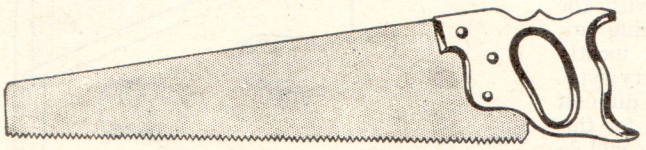
The Handsaw

The most common, of course, is the handsaw, and this is obtainable in a variety of lengths. Tiny ones suitable for boys' carpentry outfits have only a 10in. blade, but naturally their quality is not so good as the larger member of the same family. The ordinary carpentry saw can be 18, 24 or 26ins. long.

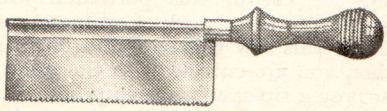
It should be of good quality steel which will allow the blade to be turned almost into the handle, then spring back to its original position without showing any sign of bending.

Blade and Teeth

The blade itself varies in thickness having its greatest width nearest the handle, and being finest along the back edge and towards the front end. Obviously, too, if the teeth are merely cut from the edge, difficulty would be found in pushing the whole piece through the wood because the blade would bind in the cut. The teeth are, therefore, "set," which merely means they are pushed out each side alternately and the edge filed on alternate sides to provide a sharp cutting action.

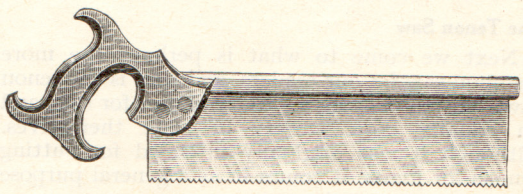


The Hand Saw is obtainable in various lengths



The small Tenon Saw

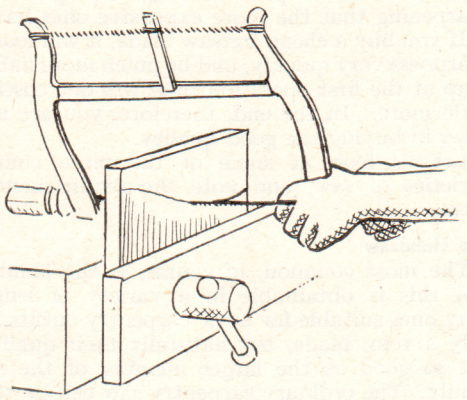
A Keyhole or Pad Saw



An ordinary large Tenon Saw

As the teeth proceed through the wood, therefore, they cut away slightly wider than the sawblade itself, thus allowing the whole tool to work through the opening easily and smoothly. Obviously as the teeth wear, there is more tendency to bind, and in consequence the set has to be put on to the saw again by means of a file or a proper saw setting process.

In this the saw is held in a vice and the file passed across alternate edges at the angle illustrated on page 413. It is obviously one of the elementary rules of using this particular saw, to have



The use of a Bow Saw

absolute control on the handle and to take a long straight stroke.

The width of the blade will cause it to bind in the wood if a vertical stroke is not maintained, because obviously it cannot bend on a curved cut.

The cutting stroke is actually on the downward pressure, which is the opposite way from that in the very unusual Japanese saw. In consequence, as long a stroke as possible should be maintained, and a fairly rapid up and down action used. Be careful, however, not to pull the blade up too far towards the toe, or the point will stick into the wood and cause the saw to bend and rather shake the user if he is not careful.

A Rip Saw

The saw should, of course, be used with the material on trestles if a large plank is being cut, and the use of this particular kind is mostly confined to large work of ordinary carpentry type. Use of this saw will be found much more difficult when you are cutting with the grain, and for this purpose a rip-saw has been produced. This will do the work more rapidly as the teeth are specially designed for the purpose.

The Tenon Saw

Next we come to what is perhaps the more common saw for our readers, and that is the tenon saw. There are again a variety of uses for this, and an equally large variety of saws themselves. Although it was originally intended for cutting tenons for joints, it comes in as a general purpose saw on many occasions.

Here the blade is much shorter, and is usually obtainable anything between 10 and 14ins. long. A smaller tenon saw of similar type is also obtainable, but this is used only on small work such as stripwood or beadings.

The tenon saw should have a comfortable handle firmly fixed to a good quality blade, and be fitted with a brass back which will keep it straight and firm. The most generally useful size is about 14ins., but in every case, of course, the teeth are much smaller than on the handsaw. It is used with the wood on the bench, and when commencing the thumb is placed on the mark to be cut and the blade pushed close to it for the first stroke to be drawn.

A Keyhole Saw

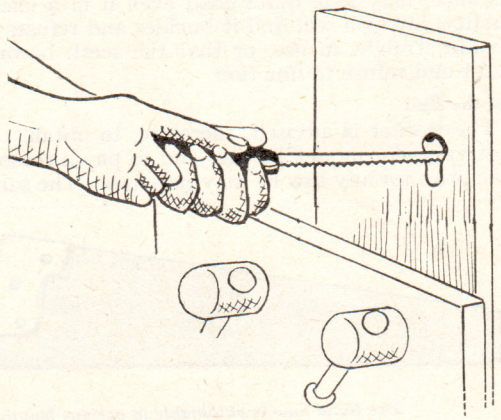
Next we come to the saw which is required for cutting out interior work, and which as its name suggests, was originally intended for keyholes.

The keyhole saw has a long tapering blade, and is sometimes called a compass saw. The actual shape of the handle may be like the ordinary handsaw, and the blade is similar in style, but, of course, very much smaller. Some handles are provided with more than one length of blade so it can be changed according to the work in hand.

The method of use is to drill a hole large enough to take the tiny blade, then to start the cutting in the direction required. This type of saw can be used on a larger curve, or any normal angles, but it cannot be turned to the small shapes in the same manner as a fretsaw.

The Bow Saw

We also illustrate herewith a most peculiar looking tool known as a bow-saw, and this probably is the original primitive cutting tool used. Here we have a long narrow blade of equal length from end to end, held by a framework with two handles.



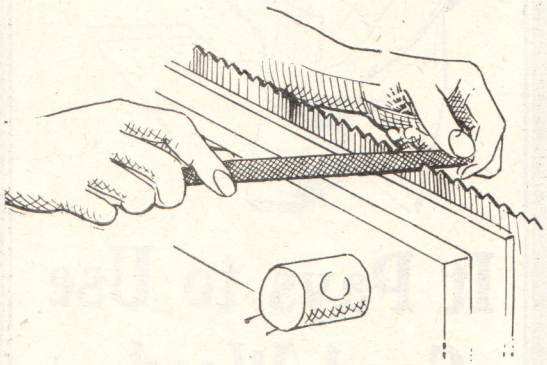
How the Keyhole Saw is used

The tension of the blade is obtained by the primitive method of twisting string through a piece of wood turned through the centre loop, much in the way of a tourniquet.

Obviously such a saw is more clumsy to use, and both hands are required to manipulate it. In consequence, it is giving place very largely to the fretsaw which is much more simple and satisfactory.

Similar to the keyhole saw we have what is known as the pad-saw, and here the blade is very similar to the keyhole saw, but is fixed into a different shaped handle. There is a variety of these shapes and the one illustrated is that made by Hobbies as being comfortable and practical.

As can be seen, the back end of the blade is held by a special fixing method in the handle itself. In use a hole is made with a drill, then the keyhole saw operated in the usual way. One of the common faults is that it is used too quickly, the blade gets hot then buckles. Take an even steady



Sharpening the teeth with a file

stroke, keeping the teeth firmly on the cutting line and use at right-angles to the wood.

The average use of a saw by the amateur does not wear its teeth or cutting edge down very much, but if a woodworker is doing a considerable amount of cutting he will realise the saw is gradually getting blunt. It is only making for hard work if you use a saw that requires sharpening, because not only does it take more forcing through the wood, but there is more aptness to turn or buckle in the blade itself.

Have the setting done by an expert and you will notice the difference in use. The saw should not need to be forced through the wood with any great amount of pressure, but by a normal weight of the hand holding it firmly in position, it should cut through the grains of the material cleanly and steadily.

One occasionally sees a worker getting quite hot in attempting to cut through a board with the handsaw at a terrific rate. This is needlessly tiring, and if one takes a steady stroke and allows the teeth to cut normally, a straightforward operation is performed without undue trouble.

Keep Free from Rust

All sawblades, of course, are of bright steel and should not be allowed to get rusty. They are usually sold with a film of vaseline or oil, and as this gets rubbed off in use, it should be replaced from time to time. This is particularly the case if the saw is being left in a damp shed or workshop.

If the rust does happen to get on, it should be cleaned off with emery cloth, then the bright surface preserved by rubbing the oil over. Do not have a definite coating, but merely a light film over the whole surface.

If the saw has a tendency to stick, a spot of grease on the teeth will help it through, but it must be remembered this is apt to colour the wood, and should not, therefore, be used when special work is being undertaken.

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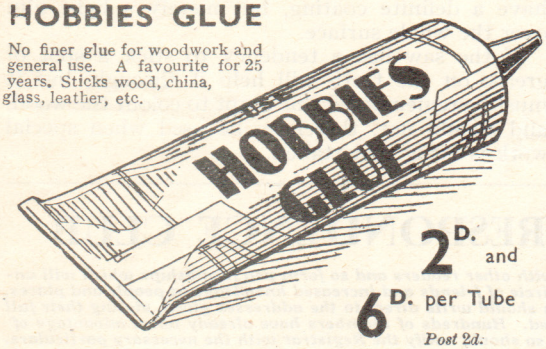

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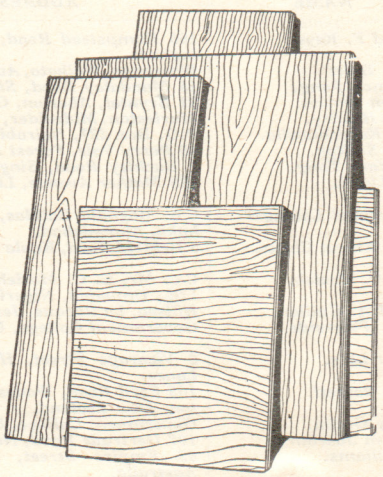

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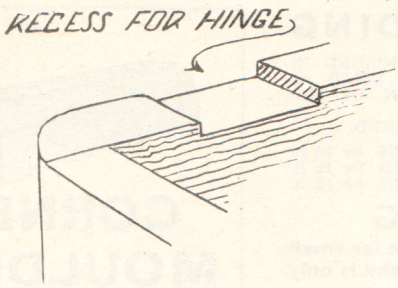
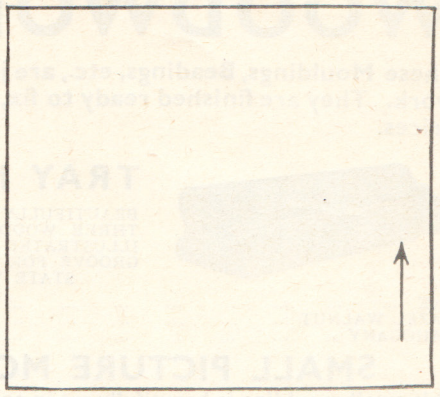
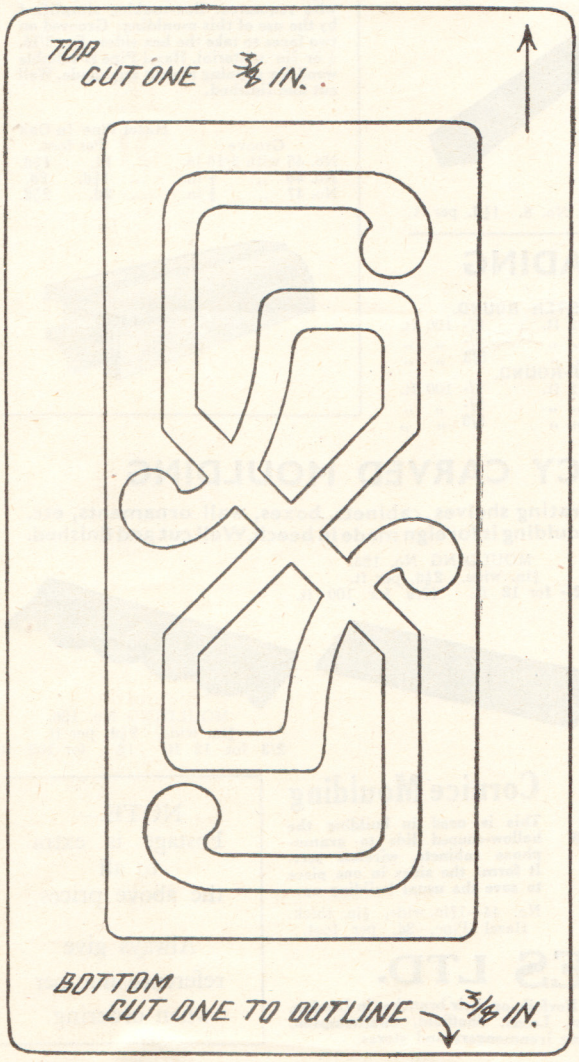
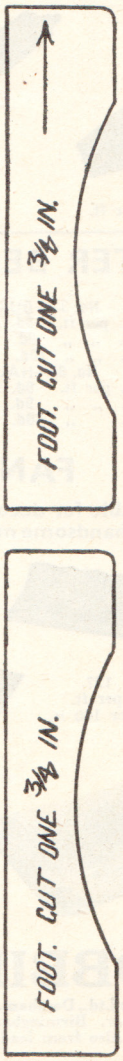
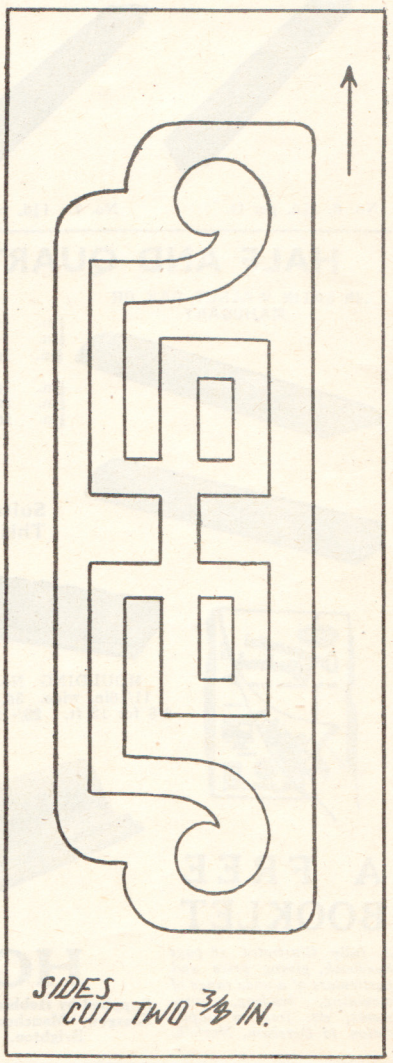
Instructions on page 404











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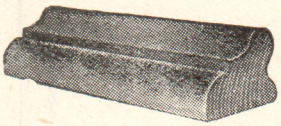

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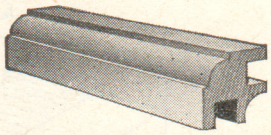

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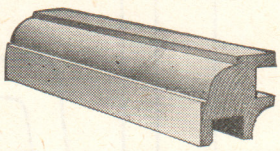

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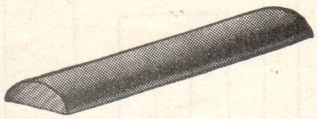

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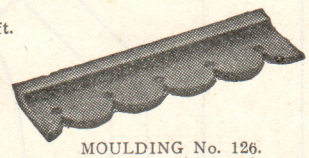

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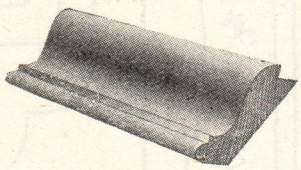

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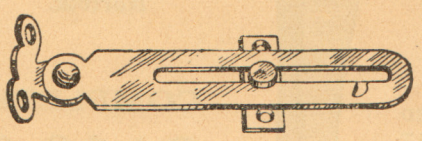
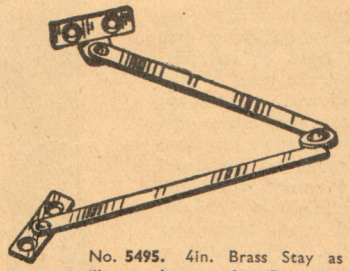


Just the thing for Gramophone Lids, Cabinets, etc., 5 inches long. Price **8d.** each. Postage 1½d. Cheaper quality, also 5ins. long, **4½d.** Postage 1½d.

Next time you want a lid stay try one of these! They are nicely finished and good value at the prices quoted. The automatic stay is positive in action—with nothing to get out of order.



No. **5495.** 4in. Brass Stay as illustrated. **6d.** Post 1½d.
No. **6178.** 3 in. Heavy Brass Stay 1/-. Postage 2d.

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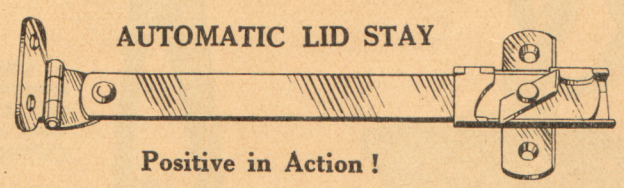
AUTOMATIC LID STAY

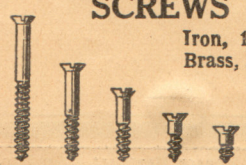


Positive in Action!

The lid is securely held in the open position, yet a slight touch releases the mechanism and allows it to be closed. The action is automatic and fool-proof.

No. **6191:** Price 1/- Postage 2½d

SCREWS for FRETWORK



Iron, 1½d. per doz., 1/- per gross.
Brass, 2½d. per doz., 2/- per gross.
Post 1½d.

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DEREHAM

REPLY COUPON

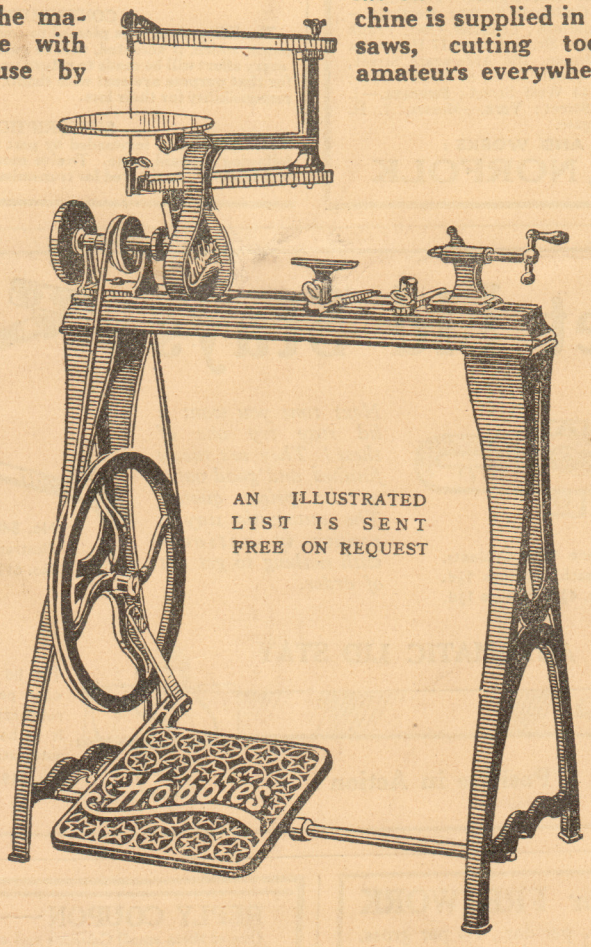
One of these small Coupons and a stamp for 1½d. must be attached to your letter to the Editor, if you are enquiring about anything which demands an answer. Cut the Coupon out and put it in with your letter which should be addressed to The Editor, Hobbies Weekly, Dereham, Norfolk

HOBBIES "COMPANION" LATHE AND FRETSAW

Specially designed for the amateur

Suitable for all kinds of woodwork

There are hundreds of jobs made possible to any owner of this combined lathe and fretsaw. You can make your own knobs, feet, turnings, legs, etc., with the lathe and cut out the ordinary woodwork with the fretsaw. The whole machine has been specially designed for the amateur to be light and easy to operate, and yet strong enough to undertake almost any class of work. The driving wheel is provided with grooves to give a change of speed, and the fretsaw can be attached and taken off easily and quickly. The treadle movement is strong and smooth running, and a circular saw can be added to the lathe if desired. The machine is supplied in a crate ready to use, complete with saws, cutting tools, rests, etc. Already in use by amateurs everywhere.



AN ILLUSTRATED LIST IS SENT FREE ON REQUEST

The lathe has a 24in. bed with 14in. between centres. It stands 27ins. high to bed and is firm and rigid on its feet. The lathe head is provided with a 2in. Face Plate, a spur centre, and a screw centre for turning cups. It has also a solid emery wheel and a drill spindle. The tail stock has a screw feed centre. The lathe is provided with two rests, three turning tools, wrench and screwdriver, and with the fretsawing attachment, designs, saws, drill points, etc. The fretsawing attachment is secured to the lathe bed by one bolt, and can be put on and taken off as desired. It is fitted with 19in. arms, nickel-plated tilting table and Hobbies spring-open lever saw clamps.

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COMPLETE

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Carr. forward

A larger lathe, 20in. between centres and fitted with a fretsaw attachment, also supplied for £5/10/0 carriage forward

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